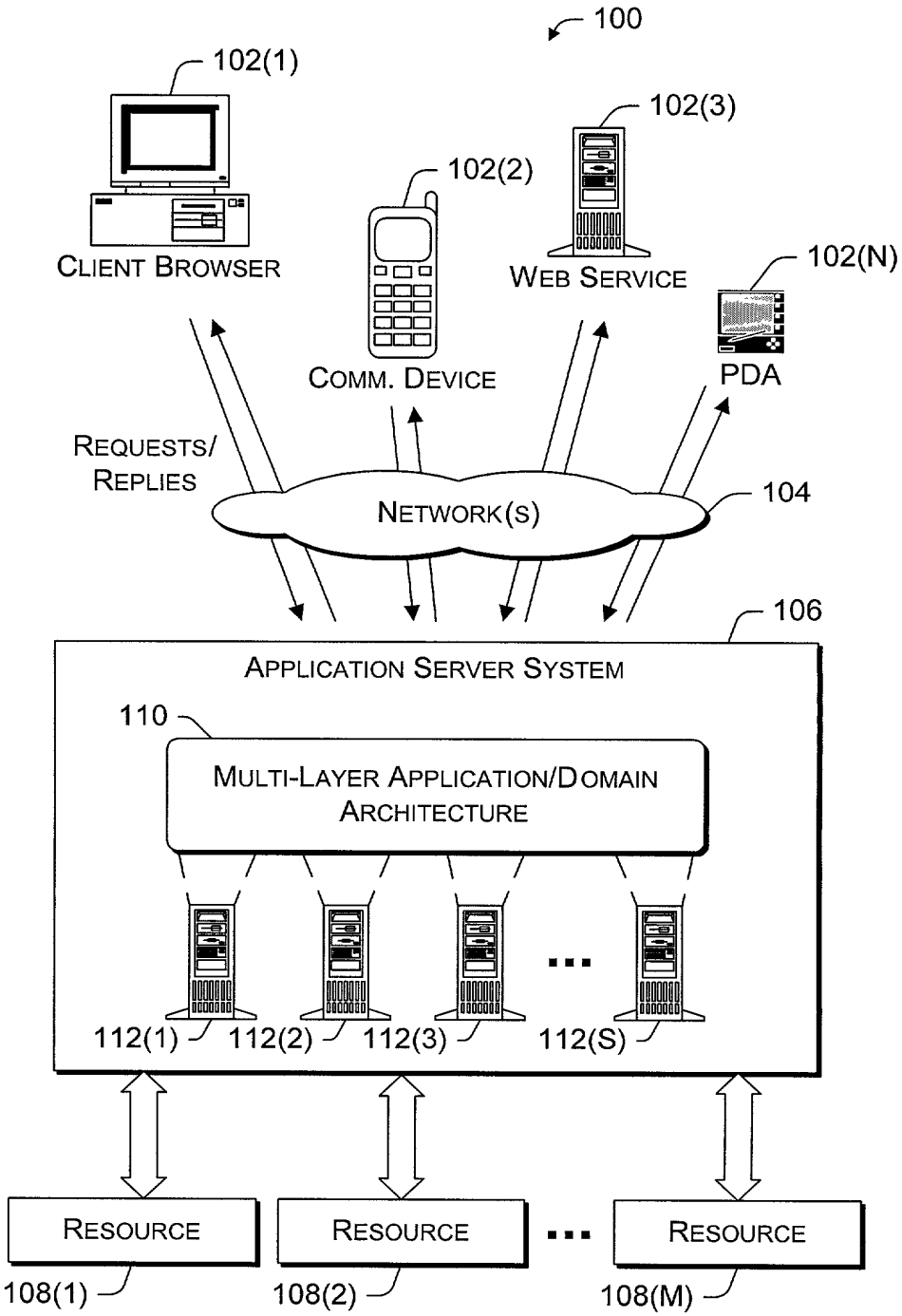
100
102(1)
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102(2)
COMM. DEVICE
102(3)
WEB SERVICE
102(N)
PDA
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REPLIES
NETWORK(S)
104
106
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110
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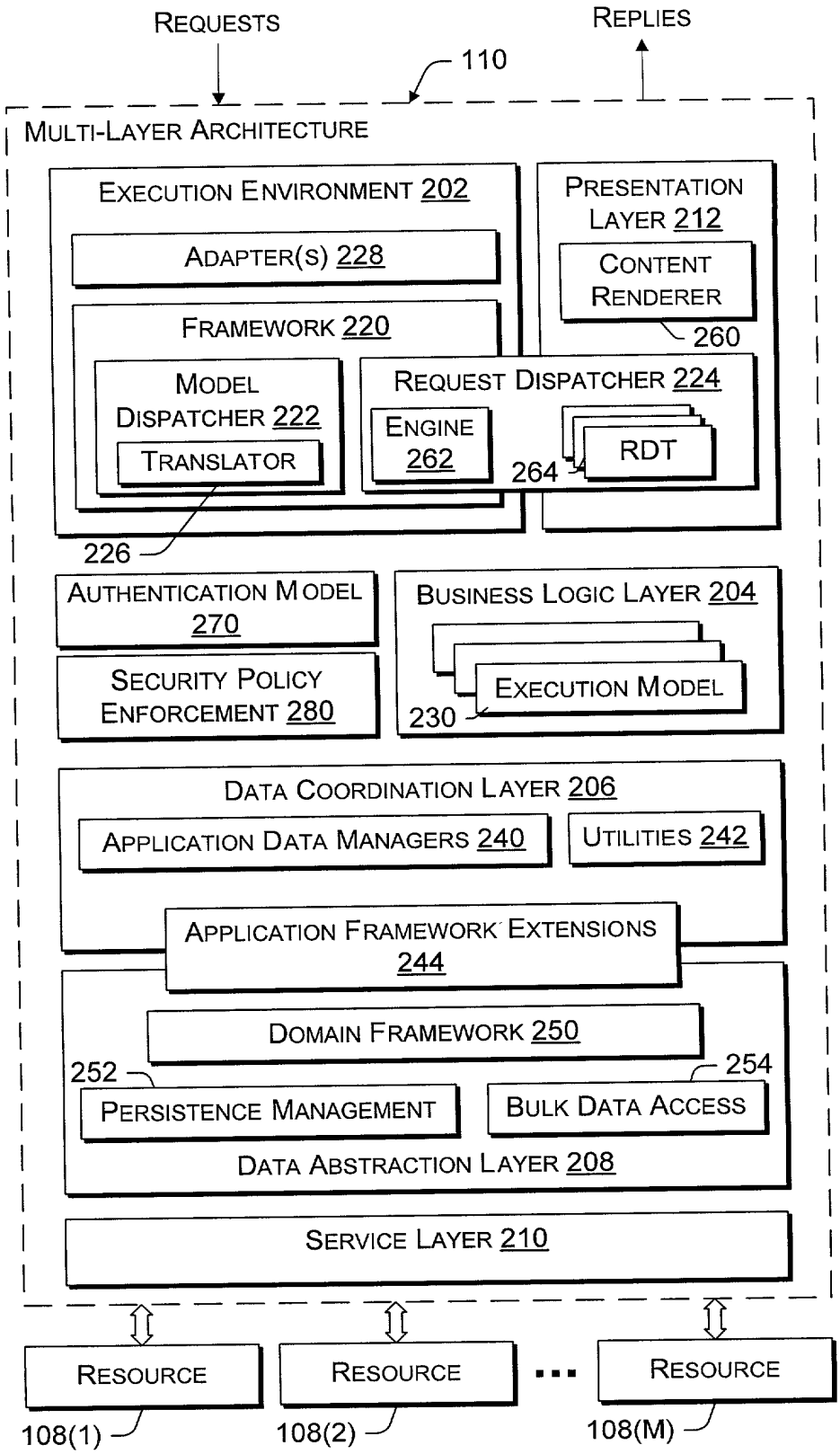
ARCHITECTURE
112(1)
112(2)
112(3)
112(S)
RESOURCE
RESOURCE
RESOURCE
108(1)
108(2)
108(M)

Fig. 1


REQUESTS
REPLIES
110
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FRAMEWORK 220
MODEL DISPATCHER 222
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CONTENT RENDERER
260
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SECURITY POLICY ENFORCEMENT 280
BUSINESS LOGIC LAYER 204
EXECUTION MODEL
230
DATA COORDINATION LAYER 206
APPLICATION DATA MANAGERS 240
UTILITIES 242
APPLICATION FRAMEWORK EXTENSIONS 244
DOMAIN FRAMEWORK 250
252
254
PERSISTENCE MANAGEMENT
BULK DATA ACCESS
DATA ABSTRACTION LAYER 208
SERVICE LAYER 210
RESOURCE
RESOURCE
RESOURCE
108(1)
108(2)
108(M)

Fig. 2

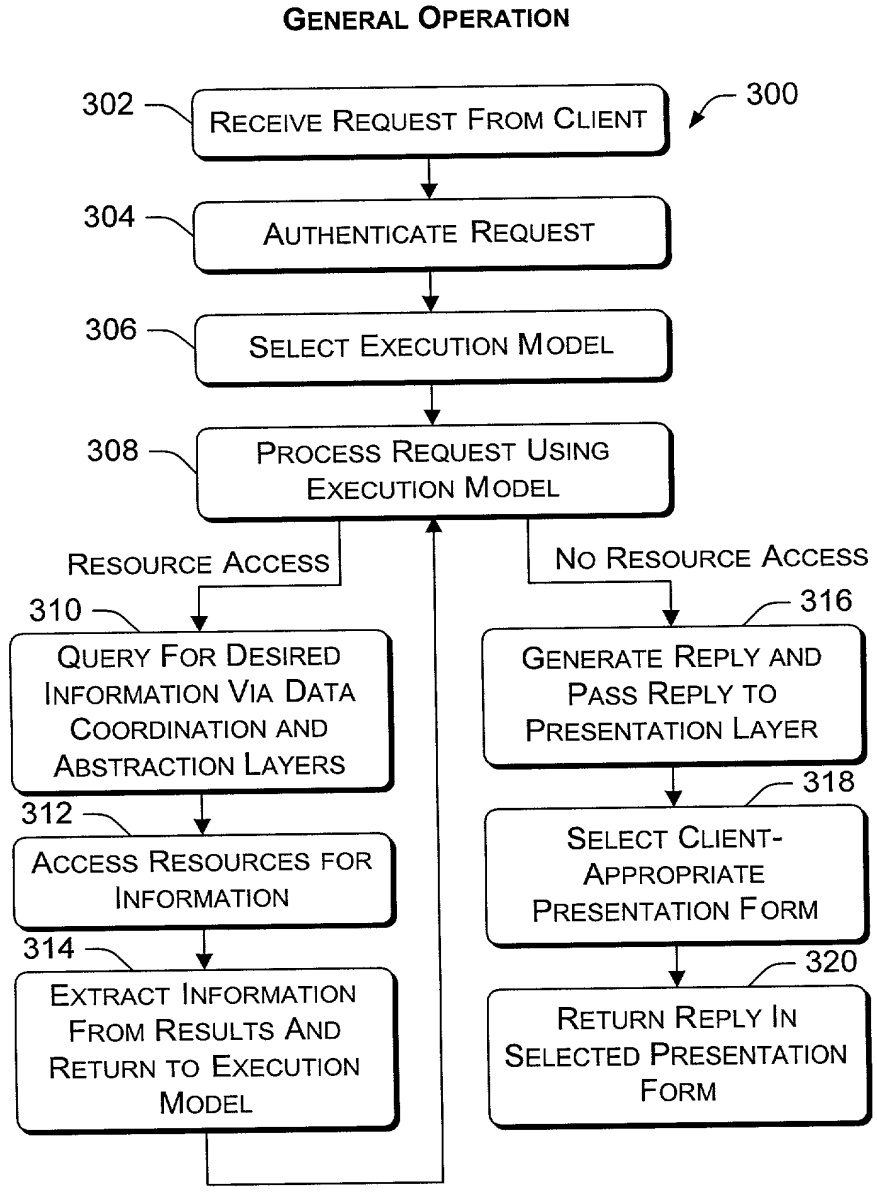
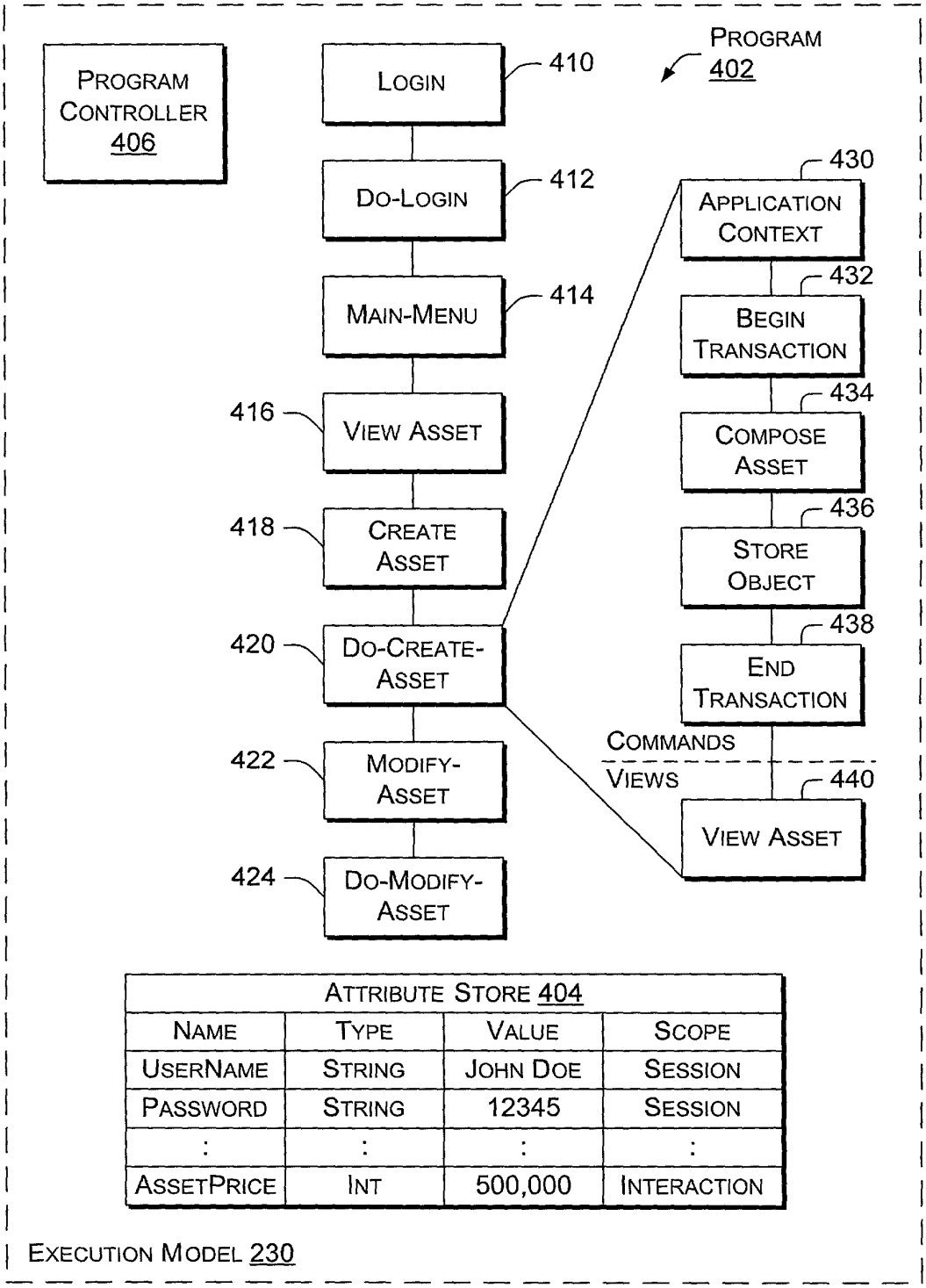

GENERAL OPERATION
300
302
RECEIVE REQUEST FROM CLIENT
304
AUTHENTICATE REQUEST
306
SELECT EXECUTION MODEL
308
PROCESS REQUEST USING EXECUTION MODEL
RESOURCE ACCESS
NO RESOURCE ACCESS
310
QUERY FOR DESIRED INFORMATION VIA DATA COORDINATION AND ABSTRACTION LAYERS
312
ACCESS RESOURCES FOR INFORMATION
314
EXTRACT INFORMATION FROM RESULTS AND RETURN TO EXECUTION MODEL
316
GENERATE REPLY AND PASS REPLY TO PRESENTATION LAYER
318
SELECT CLIENT-APPROPRIATE PRESENTATION FORM
320
RETURN REPLY IN SELECTED PRESENTATION FORM

Fig. 3


PROGRAM CONTROLLER 406
LOGIN
410
PROGRAM 402
DO-LOGIN
412
MAIN-MENU
414
VIEW ASSET
416
CREATE ASSET
418
DO-CREATE-ASSET
420
MODIFY-ASSET
422
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424
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430
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432
COMPOSE ASSET
434
STORE OBJECT
436
END TRANSACTION
438
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VIEWS
VIEW ASSET
440
ATTRIBUTE STORE 404
NAME | TYPE | VALUE | SCOPE
USERNAME | STRING | JOHN DOE | SESSION
PASSWORD | STRING | 12345 | SESSION
: | : | : | :
ASSETPRICE | INT | 500,000 | INTERACTION
EXECUTION MODEL 230

Fig. 4

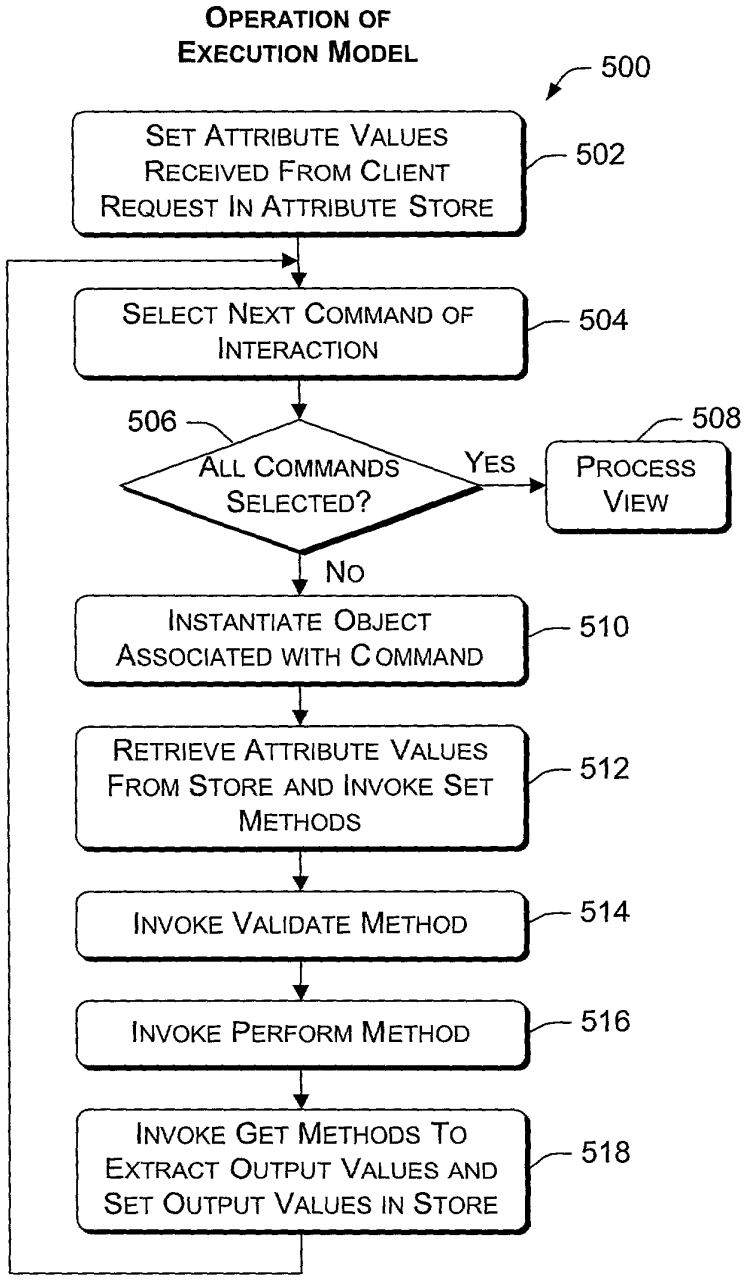
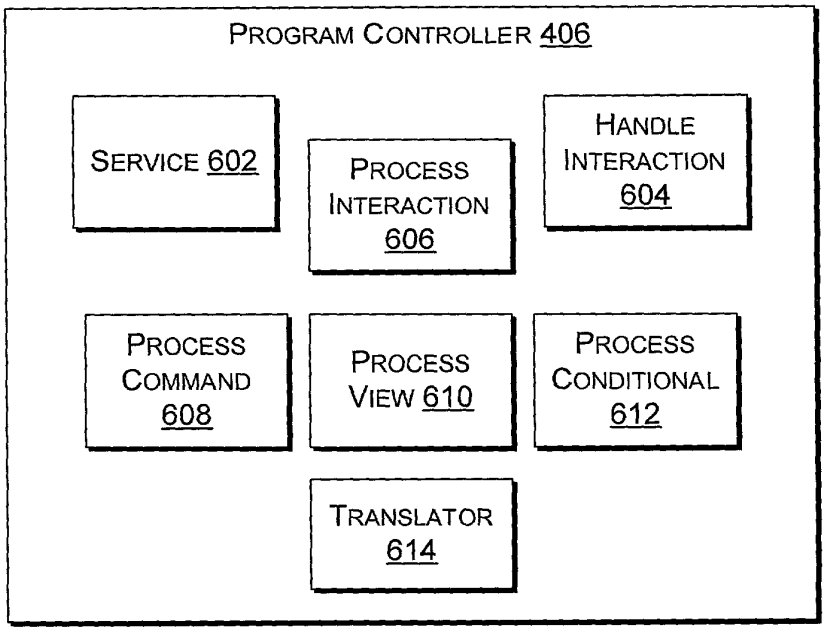

OPERATION OF EXECUTION MODEL
500
SET ATTRIBUTE VALUES RECEIVED FROM CLIENT REQUEST IN ATTRIBUTE STORE
502
SELECT NEXT COMMAND OF INTERACTION
504
506
ALL COMMANDS SELECTED?
YES
508
PROCESS VIEW
NO
INSTANTIATE OBJECT ASSOCIATED WITH COMMAND
510
RETRIEVE ATTRIBUTE VALUES FROM STORE AND INVOKE SET METHODS
512
INVOKE VALIDATE METHOD
514
INVOKE PERFORM METHOD
516
INVOKE GET METHODS TO EXTRACT OUTPUT VALUES AND SET OUTPUT VALUES IN STORE
518

Fig. 5


PROGRAM CONTROLLER 406
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PROCESS INTERACTION 606
HANDLE INTERACTION 604
PROCESS COMMAND 608
PROCESS VIEW 610
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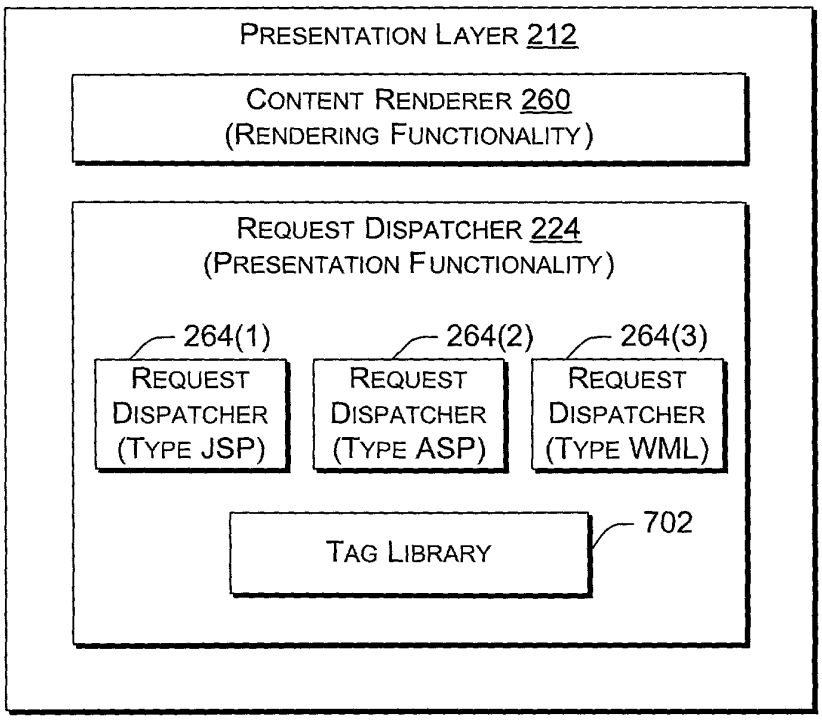
Fig. 6


PRESENTATION LAYER 212
CONTENT RENDERER 260
(RENDERING FUNCTIONALITY)
REQUEST DISPATCHER 224
(PRESENTATION FUNCTIONALITY)
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264(2)
REQUEST DISPATCHER (TYPE ASP)
264(3)
REQUEST DISPATCHER (TYPE WML)
TAG LIBRARY
702

Fig. 7

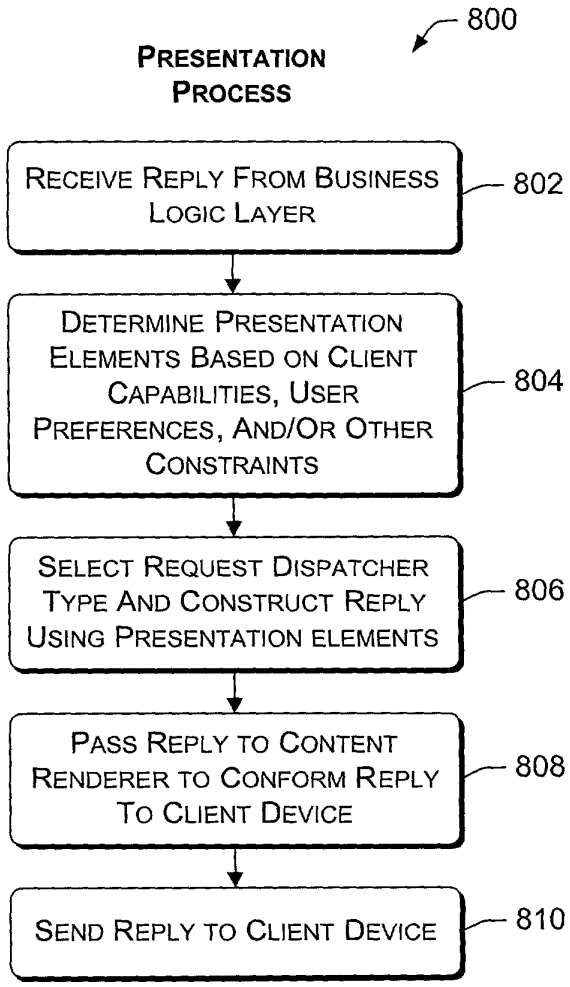

Fig. 8

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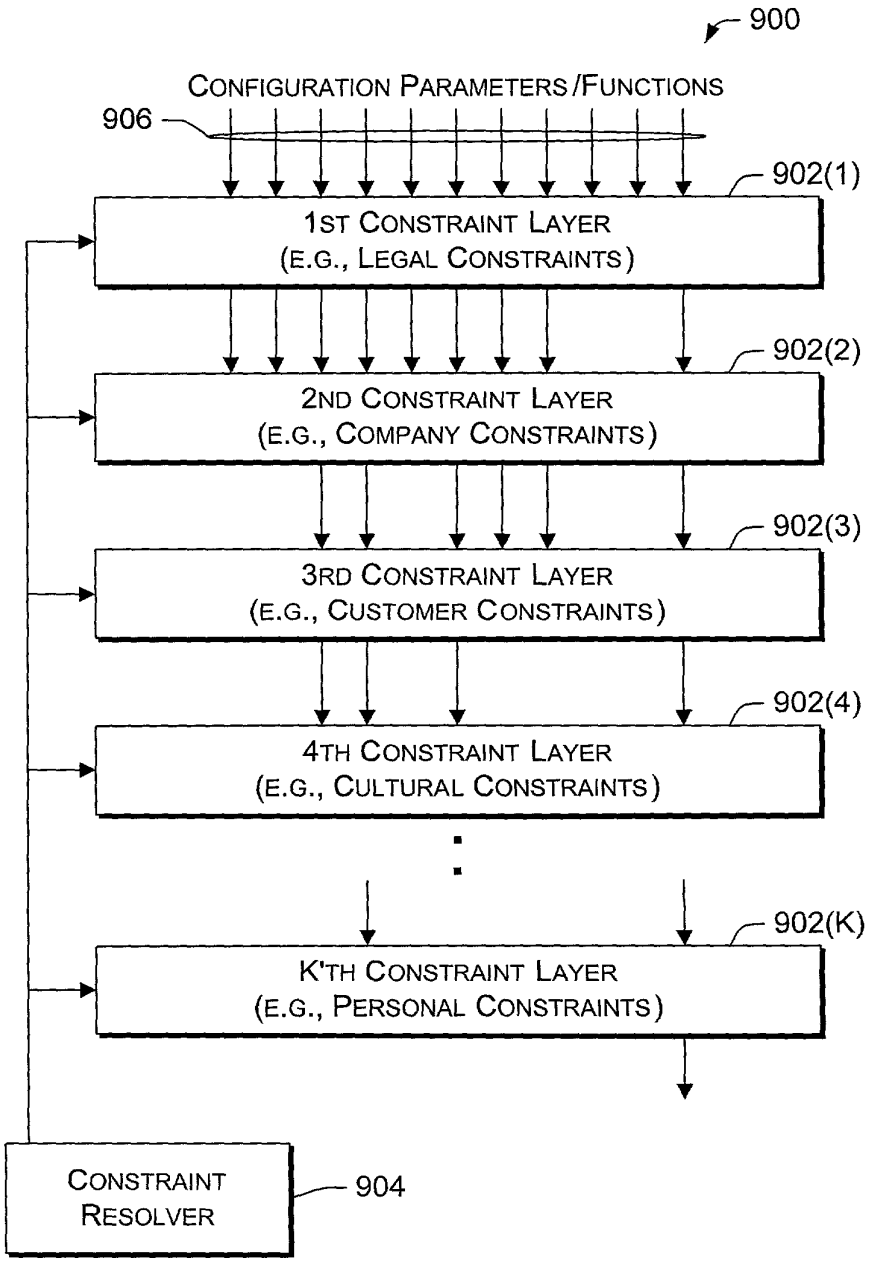
900
CONFIGURATION PARAMETERS/FUNCTIONS
906
902(1)
1ST CONSTRAINT LAYER
(E.G., LEGAL CONSTRAINTS)
902(2)
2ND CONSTRAINT LAYER
(E.G., COMPANY CONSTRAINTS)
902(3)
3RD CONSTRAINT LAYER
(E.G., CUSTOMER CONSTRAINTS)
902(4)
4TH CONSTRAINT LAYER
(E.G., CULTURAL CONSTRAINTS)
902(K)
K'TH CONSTRAINT LAYER
(E.G., PERSONAL CONSTRAINTS)
CONSTRAINT RESOLVER
904

Fig. 9

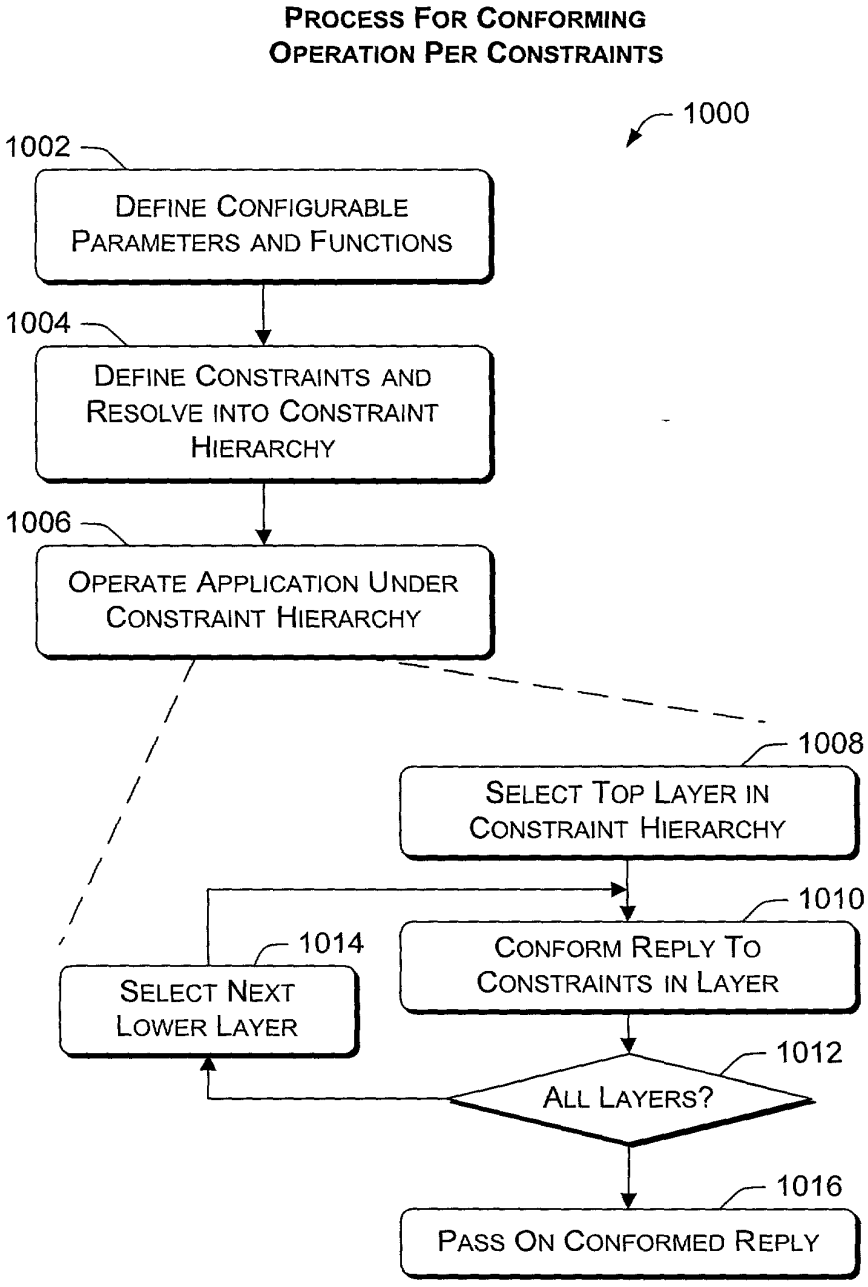
PROCESS FOR CONFORMING OPERATION PER CONSTRAINTS
1000
1002
DEFINE CONFIGURABLE PARAMETERS AND FUNCTIONS
1004
DEFINE CONSTRAINTS AND RESOLVE INTO CONSTRAINT HIERARCHY
1006
OPERATE APPLICATION UNDER CONSTRAINT HIERARCHY
1008
SELECT TOP LAYER IN CONSTRAINT HIERARCHY
1010
CONFORM REPLY TO CONSTRAINTS IN LAYER
1012
ALL LAYERS?
1014
SELECT NEXT LOWER LAYER
1016
PASS ON CONFORMED REPLY

Fig. 10